أعمال الملتقى الدولي الرابع حول مناهج البحث في اللغة والأدب والفنون

Difficulties and Obstacles to Scientific Research : The Problem of Mastering the Scientific Writing.

صعوبات وعقبات البحث العلمي: مشكل إتقان الكتابة العلمية

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Abstract

Scientific writing constitutes an integral part of the scientific research. It enables interpreting the results and the findings of scientific researchers into a written document that aims at communicating the results with the peer experts or with the general readership. However, many researchers fail to transfer their findings into a well written document that satisfy the target scientific genre's requirements. This can lead to unwelcome misunderstanding and exclusion. Hence, many good researchers miss opportunities of publishing or participating in conferences because they ignore the techniques of scientific writing as well as the distinctive features of the scientific discourse. To investigate what sorts of difficulties face researchers in writing their scientific findings, a study was conducted at the Department of English in El-Oued university. A corpus comprising 10 abstracts composed by 10 Master I students was compiled. A qualitative corpus analysis research method was adopted to detect the anomalies. Results of the study reveal the existence of a breach of the rules and the standards of the scientific writing on different levels. On the lexical level, there had been an overuse of adjectives, adverbs and attitudinal words as well as the use of common words instead of using specific terms related to the domain. On the grammatical level, students opt for long sentences which can be avoided by nominal compounds for the sake of precesion and making scientific language more compact. Personal references are to be avoided by adopting the passive voice or other substitutions; modals can also be used for hedging to reduce

commitment since the scientific discourse is characterized by the objective style. Tenses also were not appropriately used. As far as discourse and style levels are concerned, there had been either an omission or a non respect of the distribution of the mandatory moves found in abstracts in general : objective of the study, research problem, research investigation tools, results, implications and recommendations. Furthermore, the absence of discourse markers was detected which can affect the organization of thoughts. Spoken negatives and contracted forms were also present which have to be avoided in the scientific writing since they reduce the formal style of the written document. It had been noticed that students forget that the adoption of simple language, clarity, brevity and precision should be maintained throughout the written scientific document. The present study ends up with recommendations to organize regular study days to equip the students with the required techniques for the scientific writing. Furthermore university decision makers should allot more timing for Research Methodology module and why not to extend it to cover all years of the curriculum.

Keywords : Scientific research ; Scientific writing ; Distinctive features, Writing requirements ; Academic settings.

الملخص

تشكل الكتابة العلمية جزءا لا يتجزأ من البحث العلمي. فهي تسمح بترجمة النتائج العلمية للباحثين إلى وثيقة مكتوبة تهدف إلى التواصل مع الخبراء الأقران أو مع جمهور القراء العام. لكن العديد من الباحثين فشلوا في تحويل نتائجهم إلى وثيقة مكتوبة بشكل جيد من شأنها أن تلبي متطلبات النوع العلمي المستهدف. وهذا يمكن أن يؤدي إلى سوء فهم واستبعاد غير مرغوب فيهما. وبالتالي، فإن العديد من الباحثين الجيدين يفوتون فرص النشر أو المشاركة في المؤتمرات لأنهم يجهلون تقنيات الكتابة العلمية وكذلك السمات المميزة للخطاب العلمي. وللتعرف على أنواع الصعوبات التي تواجه الباحثين في كتابة نتائجهم العلمية، أجريت دراسة في قسم اللغة الإنجليزية بجامعة الوادي. و قد تمت دراسة مجموعة تضم 10 ملخصات كتبها 10 طلاب ماستر1. حيث أعتمد المنهج التحليلي للكشف عن الحالات الشاذة. أظهرت نتائج الدراسة وجود خرق للقواعد ومعايير الكتابة العلمية على مختلف المستويات. على المستوى اللفظي، كان هناك إفراط في استخدام الصفات، والظروف والكلمات المعبرة عن المواقف وكذلك استخدام الكلمات العامة بدلا من استخدام مصطلحات محددة تتعلق بمجال الإختصاص. على

المستوى النحوي، لوحظ أن الطلاب يميلون الى اختيار الجمل الطويلة التي يمكن تجنبها بجمل إسمية من أجل الدقة وجعل اللغة العلمية أكثر إحكاما. كما ينبغي تجنب استخدام الضمائر الشخصية باعتماد صيغ المبني للمجهول أو بدائل أخرى. كما لوحظ أيضا سوء استخدام الأزمنة. وفيما يتعلق بالخطاب و الأسلوب، كان هناك إما إغفال أو عدم احترام لتوزيع الوحدات الإلزامية المتواجدة في الملخصات بصفة عامة: هدف الدراسة، ومشكلة البحث، وأدوات البحث، والنتائج، والآثار والتوصيات. وعلاوة على ذلك، تم الكشف عن عدم وجود أدوات الربط التي يمكن أن تؤثر على تنظيم الأفكار. كما كانت صيغ النفي الشفاهية متواجدة أيضا والتي يجب تجنبها في الكتابة العلمية لأنها تقلل من الطابع الرسمي للوثيقة العلمية المكتوبة. وقد لوحظ أيضا أن الطلاب ينسون أن اعتماد اللغة البسيطة و كذا الوضوح والإيجاز والدقة ينبغي أن يطبق على كل النص العلمي المكتوب. وتختتم الدراسة الحالية بتوصيات لتنظيم أيام دراسية منتظمة لتزويد الطلاب بالتقنيات المطلوبة للكتابات العلمية. وعلاوة على ذلك، يجب على صناع القرار في الجامعة تخصيص توقيت أكبر لمادة منهجية البحث العلمي، ولما لا توسيعها لتشمل جميع السنوات في المنهاج الدراسي.

الكلمات المفتاحية: البحث العلمي؛ الكتابة العلمية؛ السمات المميزة، متطلبات الكتابة, المجالات الأكاديمية.

0. Introduction

Scientific writing constitutes an integral part of the scientific research. It enables interpreting the results and the findings of scientific researchers into a written document that aims at communicating the results with the peer experts or with the general readership. Research articles' abstracts, which is one genre of the scientific writings, have to be carefully composed and strictly respect the scientific writing rules. Well composed abstracts encourage readers to continue reading the full articles and increase the chance to be accepted for conference participation or journal publishing. However, many researchers fail to transfer their findings into a well written document that satisfy the target scientific genre's requirements. This can lead to unwelcome misunderstanding and exclusion. Hence, many good researchers miss opportunities of publishing or participating in conferences because they ignore the techniques of scientific writing as well as the distinctive features of the scientific discourse. To investigate what sorts of difficulties face researchers in writing their scientific findings, a study was conducted at the Department of English in El-Oued

university. A corpus analysis method of a number of 10 abstracts was adopted.

The research problem stated above suggests the following research questions.

- What are the levels of the linguistic analysis that are subject to a breach of the rules and the standards of the scientific writing by students ?

- What anomolies can be detected on the different levels ?

- What recommendations should be suggested to ameliorate the writing of abstracts ?

1.Literarture Review

1.1 Definition of Scientific research

The Advanced Learner's Dictionary of Current English defines research as "a careful investigation or inquiry specially through search for new facts in any branch of knowledge."

D. Slesinger and M. Stephenson define research in the Encyclopaedia of Social Sciences as "the manipulation of things, concepts or symbols for the purpose of generalising to extend, correct or verify knowledge, whether that knowledge aids in construction of theory or in the practice of an art'' .

Karl Pearson states that "The scientific method is one and same in the branches (of science) and that method is the method of all logically trained minds … the unity of all sciences consists alone in its methods, not its material; the man who classifies facts of any kind whatever, who sees their mutual relation and describes their sequences, is applying the Scientific Method and is a man of science." According to Rusk cited in Singh, Y.K. (2006)

> research is a point of view, an attitude of inquiry or a frame of mind. It asks questions which have hitherto not been asked, and it seeks to answer them by following a fairly definite procedure. It is not a mere theorising, but rather an attempt to elicit facts and to face them once

> they have been assembled. Research is likewise not an attempt to bolster up pre conceived opinions, and it implies a readiness to accept the conclusions to which an inquiry leads, no matter how unwelcome they may prove. When successful, research adds to the scientific knowledge of the subject.

1.2 Definition of Scientific Writing

Robert Goldbort (2006), defines Scientific English as "...a communication tool, a culture of writing, and a plain and readable manner of writing with specific compositional strategies and uses of language—all of which permit the community of scientific researchers to conduct its professional affairs''.

Scientific English may also refer to the scientists' writings that aim at presenting their findings to different kinds of audiences – peer researchers and the public.

In the academic settings, the writing requirements should be respected by writers and any kind of breach of the standards and the writing rules would result in unwelcome misunderstanding and exclusion. Therefore, any scientific document has to satisfy the target scientific genre's requirements.

1.2.1 Distinctive Features of Scientific Writing

Scientific Writing or Scientific English can be regarded as a specialized discourse since it has distinctive features that make it different from the general English. This distinctiveness can be shown on the different linguistic levels.

For Strevens (1976),

> "scientific English" is simply "English used by scientists or for the purposes of those engaged in science." It has the same grammar, pronunciation and spelling that are found in all

kinds of English; it includes much of the general vocabulary of English, though with a large number of specialized items or familiar words used in specialized ways; it also carries an array of linked symbols and visual symbolizations.

(Strevens 1976 Cited in Lowe I 2009).

1.2.3 Scientific Writing Genres

Scientific documents or genres can be better clarified by the classification suggested by Goldbort in the table below.

Table 01 : Purposes, types, audiences, and styles of scientific writing (Goldbort, R 2006 pp 5-6)

Purpose	**Genres (document types)**	**Audiences (intended readers)**	**Linguistic Style**
Recording and Archiving	Laboratory notes, with other preservable forms of documentation,such as equipment, printouts, photos, and special artifacts for verifiability	Self; research collaborators; workplace supervisors	Informal to highly formal notations in arcane shorthand; lab jargon
Professional exposition and synthesis	Scholarly articles and books; abstracts; notes and visual media for conference papers and seminars;	Researchers in same or related field	Highly formal, with heavy use of jargon

	letters; e-mail.		
Teaching	Textbooks; syllabi; electronic slides; Web-based information, and other pedagogical materials	Students at all levels	Moderately to highly formal, with parallel range in jargon
Performing job duties	On-the-job communications including e-mail, letters, memoranda, meeting minutes, and activity or progress reports; internal and external	Research associates, colleagues, and administrators	Informal to highly formal; low to high level of jargon
Seeking research resources	Grant proposals to government agencies, corporations, and philanthropic foundations	Granting agency officials; peer reviewers	Highly formal; moderate to heavy use of jargon
Informing citizens	Articles, essays, and books; special letters; Web-based material; creative forms; expert testimony and other consulting documents	General public; special-interest groups	Formality and low to moderate jargon

1.2.4 Abstracts

They are a genre of a scientific writing. It is the first thing to appear in any scientific written document. It can be found in research papers,

articles, books …etc. It is too important to pay special attention to this genre since it informs the reader from the very beginning about the scientific document content. In the abstract, the writer condence information in a concise piece of writing. It can stand alone for instance in a book of abstracts. The abstract obligatory moves are: purpose, research questions, methods, findings, conclusions and recommendations

2.Rationale and Objectives of the Study

The present research was conducted mainly to investigate what sorts of difficulties face researchers in writing their scientific findings for an ultimate goal to help young researchers at the depatment of English at Hamma Lakhdar University to improve the quality of their academic writings. It was aggreed that many researchers fail to transfer their findings into a well written document that satisfy the target scientific genre's requirements which can lead to unwelcome misunderstanding and exclusion. Many good researchers miss opportunities of publishing or participating in conferences because they ignore the techniques of scientific writing as well as the distinctive features of the scientific discourse. The present study may help in equipping the students with cetain rules to improve their academic writing quality.

3. Methodology

To conduct this research a qualitative corpus analysis research method was adopted. The analysis occurred on different linguistic levels : the lexical level, the grammatical level as well as style and discourse levels.

3.1. Paricipants

The participants of the present study are ten (10) English language Master One students studying in the academic year 2016 – 2017 at the Department of English at Hamma Lakhdar University in El- Oued.

3.1 Description of the Corpus

A corpus comprising 10 abstracts composed by the 10 participant was compiled. Abstracts are part of longer and regular research methodology assignments. They are scientific articles abstracts. Students were asked to write abstracts for research articles. The topic was about : « The Students' Reading Habits ».

4. Conclusions and Discussion of the Research Findings

Results of the study reveal the existence of a breach of the rules and the standards of the scientific writing on different levels. On the lexical level, there had been an overuse of adjectives, adverbs and attitudinal words as well as the use of common words instead of using specific terms related to the domain. Examples are shown in the table below.

Table 02: Misued Words by the Participants Detected on the Lexical Level

Misused words by the participants	Type of Misuse	The corrected Form
Good, ambitious and active students are much more intersted in reading than others.	Sequence of unnecessary adjectives	Active students are much more intersted in reading than others
Quite often students regularly read while having exams	Unnecessary adverbs	Students read while having exams
- They are really interested in reading books. - In fact, Most of them opt for software texts	Attitudinal words and fillers	- They are interested in reading books. - Most of them opt for software texts
They Look up for the meaning of words in dictionaries	Common words instead specialized	They consult the meaning of words in dictionaries

	ones	

On the grammatical level, students opt for long sentences which can be avoided by nominal compounds for the sake of precesion and making scientific language more compact. Personal references are to be avoided by adopting the passive voice or other substitutions; modals can also be used for hedging to reduce commitment since the scientific discourse is characterized by the objective style. Tenses also were not appropriately used. This can be explained in the table below.

Table 03: Misused Elements by the Participants Detected on the Grammatical Level.

Grammatical Misuse	Type of Misuse	The Corrected Form
We have noticed that students are becoming much more interested in reading pdf books.	Non use of nominal compounds to avoid long sentences	An increased interest in reading pdf books has beennoticed.
- We wish to suggest - We have noticed an unexpected change in the students' attitudes towards reading.	Use of personal references	- This paper suggests - An unexpected change in the students' attitudes towards reading has been noticed
This phenomenon is seen as a radical change in their attitudes.	Non use of modals for hedging	This phenomenon **may** be seen as a radical change in their attitudes
The phenomenon was widespread among the youth	Inappropriate use of tenses	The phenomenon is widespread among the youth

As far as discourse and style levels are concerned, there had been either an omission or a non respect of the distribution of the

mandatory moves found in abstracts in general : objective of the study, research problem, research investigation tools, results, implications and recommendations. Furthermore, the absence of discourse markers was detected which can affect the organization of thoughts. Spoken negatives and contracted forms were also present which have to be avoided in the scientific writing since they reduce the formal style of the written document. It had been noticed that students forget that the adoption of simple language and that clarity, brevity and precision should be maintained throughout the written scientific document.

5. Implications and Recommendations

The present study ends up with recommendations to organize regular study days to equip the students with the required techniques for the scientific writing. Furthermore university decision makers should allot more timing for Research Methodology module and why not to extend it to cover all years of the curriculum.

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